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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/897,316	07/02/2001	Giorgio Agostini	DN2001136	1733

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The Goodyear Tire & Rubber Company
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EXAMINER

WYROZEBSKI LEE, KATARZYNA I

ART UNIT	PAPER NUMBER
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1714

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DATE MAILED: 03/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/897,316

Applicant(s)

AGOSTINI ET AL.

Examiner

Katarzyna Wyrozebski Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 5, 7, 8, 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Gorl (EP 1,010,718).

The prior art of Gorl, example 1, page 7 discloses following process: A stable dispersion of N234 carbon black, zinc oxide, Maripal (glycol ether) Stearic acid, PPD (N-(1,3-Dimethylbutyl)-N-phenyl-p-phenylenediamine) and TMQ (2,2,4-trimethyl-1,2-dihydro-chinolin) are mixed together. The dispersion is mixed and then added to latex emulsion of emulsion polymerized styrene/butadiene rubber. The mixture is vigorously stirred and composite having particulate rubber containing filler is precipitated out, which means that it is separated from the solvent, in this case aqueous solvent.

The at least part of the filler according to claim 1 of Gorl is modified with a functional group. Claim 1 of Gorl teaches that black filler (shwarzen fullstoffe) is modified with compounds of formula I, II or III of claim 3. Claim 3 teaches that the functional groups include organosilanes such as alkoxysilanes and sulfur derivatives.

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Vulcanization occurs at 165°C. Specification, on page 4, further teaches more examples of functional groups, which include polysulfides such as disulfides and tetrasulfides of ethoxysilanes. Si69 utilized in the examples is bis-triethoxysilylpropyl tetrasulfide (page 9).

In the light of the above disclosure, the prior art of Gorl anticipates requirements of claims rejected above.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

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claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 6, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gorl (EP 1,010,718).

In addition to the above discussion, the prior art of Gorl renders following aspects of the invention obvious.

In the examples the prior art of Gorl utilizes another reinforcing filler, which is silica (ULTRASIL 7000 Gr, page 9), which is also pre-treated with the same type of alkoxy silane, and which is precipitated silica. It is well settled that it is *prima facie* obvious to combine two ingredients, each of which is targeted by the prior art to be useful for the same purpose. *In re Linder* 457 F.2d 506,509, 173 USPQ 356, 359 (CCPA 1972). Therefore since both fillers are reinforcing fillers utilized separately to reinforce rubber, combination of the two fillers in appropriate amounts would still reinforce the rubber and therefore would have been an obvious modification.

The specification of the prior art of Gorl, also discloses additional functional compounds utilized to modify the filler. Mainly trialkoxysilyl-alkyl oligosulfides, such as disulfides (page 4, line 35).

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The composition can be greatly reinforced with fillers that are modified with disulfides or tetrasulfides. Utilizing mixture of the fillers utilized by the prior art of Gorl for the same purpose is obvious modification.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize mixture of carbon black and silica and thereby obtain the claimed invention. Mixture of carbon black and silica would still provide reinforced rubber composition.

7. Claims 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gorl (EP 1,010,718) in view of Mahmud (US 5,869,550).

The discussion of the disclosure of the prior art of Gorl from paragraph 6 of this office action is incorporated here by reference.

The difference between the present invention and the prior art of Gorl is showing that vulcanized rubber composition comprising carbon black and silica can be utilized in the tire tread.

With respect to the above difference, the prior art of Mahmud discloses composition comprising styrene butadiene elastomer (see example 4, col. 17). The fillers in the composition include silicon modified carbon black with is so desired addition of silica.

Carbon black of the prior art of Mahmud is N234 carbon black (example 3A) pre-treated with organosilane such as tetraethoxy orthosilicate and if desired a coupling agents such as bis(3-triethoxy silylpropyl) tetrasulfide.

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The rubber composition of Mahmud is then vulcanized at 145°C to give vulcanized composition for use in tire treads.

The goal of the prior art of Mahmud is to form composition for tire tread, that exhibits excellent traction, skid resistance. The prior art of Mahmud also teaches that if carbon black alone is utilized it does not chemically couple to a rubber, but provides interacting surface for elastomer. If silica alone is utilized, although reinforces rubber, resulting composition has high density and poor processability (col. 2, lines 52-67). Therefore mixtures of silica and carbon black may be used (col. 13, lines 10-22).

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize composition of the prior art of Gorl in making of a tire tread. Composition of Gorl also utilizes silicon modified carbon black and styrene butadiene rubber composite that is vulcanized and according to Mahmud such composition is suitable for use in tire treads for reasons stated above with silica as additional filler.

8. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gorl (EP 1,010,718) in view of Zimmer (US 6,136,919).

The discussion of the disclosure of the prior art of Gorl from paragraph 6 of this office action is incorporated here by reference.

The difference between the present invention and the prior art of Gorl is showing that reinforcing filler can be added in organic solvent to solution of styrene butadiene rubber in organic solvent, wherein the rubber component is being polymerized.

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With respect to the above differences, the prior art Zimmer discloses process where as shown in the example 1, pre-treated silica in heptane is added to polybutadiene monomer dispersion in organic solvent and then styrene. Example II teaches use of styrene-butadiene already solution polymerized, and it is well established that in the solution polymerization solvent is organic.

Although the example in the prior art of Zimmer teaches use of pre-treated silica as the reinforcing filler, claim 1 also teaches use of carbon black.

Regardless what type of solvent is utilized in a dispersion, that solvent is removed before the composite is vulcanized to form a tire tread.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize organic solvent instead of aqueous and thereby obtain the claimed invention. The resulting composite and tire tread product will be the same since the solvents have to be removed in order to form a product.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The US patents of the prior art of Gorl provide some translation of the EP patent utilized except for the type of filler. US patents utilize silica wherein the EP patents has examples to both: US 6,329,449 and 6,340,724

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna Wyrozebski Lee whose telephone number is (703) 306-5875. The examiner can normally be reached on Mon-Thurs 6:30 AM-4:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (703) 306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Katarzyna Liprubska
KIWL
March 19, 2003